

ABSTRACT OF THE DISCLOSURE

The present invention provides recombinant viruses which replicate the viral genome selectively in response to the intracellular conditions of the target cell through the use a pathway-responsive promoter which substantially inhibits viral replication in the host cell based on the phenotypic or genotypic of the infected cell. In the target cell, the promoter element of the pathway-responsive promoter is *inactive* and thus the virus is permitted to replicate. This results in: (1) killing the cells by natural lytic nature of the virus, and/or (2) provides a therapeutic dose of a transgene product (amplified in comparison to replication incompetent vectors) to the target cell, and (3) producing a localized concentration of the virus facilitating the infection of surrounding cells to the recombinant virus. The invention further provides therapeutic and diagnostic methods of use of the vectors, pharmaceutical formulations comprising the vectors, methods of making the vectors and transformed cells comprising the vectors.